

PCT/GB 2003 / 002416



**PRIORITY
DOCUMENT**

SUBMITTED OR TRANSMITTED IN
COMPLIANCE WITH RULE 17.1(a) OR (b)

GB03/02416

The Patent Office
Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

REC'D 03 JUL 2003

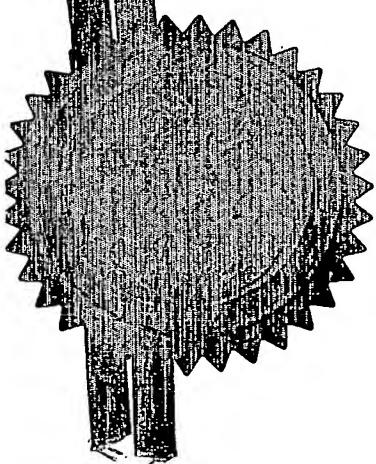
WIPO PCT

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

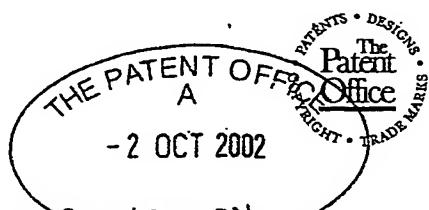
In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.



Signed

Dated 18 June 2003



1/77
02097001 0222839.3
02097001 0222839.3

Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

The Patent Office

Cardiff Road
Newport
South Wales
NP10 8QQ

1. Your reference

Jg-2859

2. Patent application number

(The Patent Office will fill in this part)

02 OCT 2002

0222839.3

3. Full name, address and postcode of the or of each applicant (*underline all surnames*)

IMWRO LTD
PO Box 95
2a Lord Street
Douglas
Isle of Man
IM99 1HP

08398414001
Patents ADP number (*if you know it*)

If the applicant is a corporate body, give the country/state of its incorporation

Isle of Man

4. Title of the invention

APPARATUS FOR WARMING A TYRE ON A WHEEL TO A
TEMPERATURE REQUIRED FOR VEHICLE RACING

5. Name of your agent (*if you have one*)

Graham Jones & Company

"Address for service" in the United Kingdom to which all correspondence should be sent
(*including the postcode*)

77 Beaconsfield Road
Blackheath
London
SE3 7LG

Patents ADP number (*if you know it*)

2097001

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (*if you know it*) the or each application number

Country

Priority application number
(*if you know it*)Date of filing
(*day / month / year*)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing
(*day / month / year*)8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (*Answer 'Yes' if:*

YES

- a) *any applicant named in part 3 is not an inventor, or*
- b) *there is an inventor who is not named as an applicant, or*
- c) *any named applicant is a corporate body.*

See note (d)

Patents Form 1/77

9. Enter the number of sheets for any of the following items you are filing with this form.
Do not count copies of the same document

Continuation sheets of this form

Description 3

Claim(s) C F

Abstract

Drawing(s) 2 + 2

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

3

Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination
(Patents Form 10/77)

Any other documents
(please specify)

11.

I/We request the grant of a patent on the basis of this application.

Signature

Date

2/10/02

12. Name and daytime telephone number of person to contact in the United Kingdom

Mr G.H. Jones 020 8858 4039

Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.

Notes

- a) If you need help to fill in this form or you have any questions, please contact the Patent Office on 08459 500505.
- b) Write your answers in capital letters using black ink or you may type them.
- c) If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.
- d) If you have answered 'Yes' Patents Form 7/77 will need to be filed.
- e) Once you have filled in the form you must remember to sign and date it.
- f) For details of the fee and ways to pay please contact the Patent Office.

APPARATUS FOR WARMING A TYRE ON A WHEEL TO A
TEMPERATURE REQUIRED FOR VEHICLE RACING

This invention relates to apparatus for warming a tyre on a wheel to a temperature required for vehicle racing.

In our patent application No. 0213133.2 we have described apparatus for warming a tyre on a wheel to a temperature required for vehicle racing.

Further embodiments of the invention are disclosed herein by way of example of only.

In a first further embodiment of the invention, the apparatus for warming the tyre may be suitable for the incorporation of supplementary thermal heating, such for example as can be achieved by radiation, conduction and convection means. One example of such supplementary thermal heating is the use of high frequency susceptor heating techniques. Susceptance and magnetic susceptibility may both be employed. The use of high frequency susceptor heating techniques may be especially advantageous where using ferromagnetic (H plane) materials that can be adhered to a metal substrate to heat the wheel hub, and where temperature control is achieved by "Curie Point" (Curie Temperature) determination during the tyre warming process. The susceptor device may typically be incorporated within the wheel mounting means to transmit heat to the metal wheel hub, combining high frequency

energy and high frequency generated thermally controlled heating within the tyre warming process.

In a second further embodiment of the invention, the apparatus for warming the tyre may be incorporated into the race vehicle construction. A high frequency generator may be fitted on-board the vehicle, using the vehicle's bodywork and electromagnetic field control techniques as the appropriate frequency into the matched tyre load, to safely control electromagnetic emissions. The high frequency energy may be applied to individual wheels in-situ as required. On-board telemetry radio feedback systems may be used to operate and control the vehicle tyre warming requirements during a race event. The racing vehicle's own electrical supply may provide the means for generating the high frequency energy.

Embodiments of the invention will now be described solely by way of example and with reference to the accompanying drawings which have been numbered on to follow the drawings in our above patent application.

In the accompanying drawings, Figure 5 shows fifth apparatus for warming a tyre on a wheel to a temperature required for vehicle racing; and

Figure 6 shows sixth apparatus for warming a tyre on a wheel to a temperature required for vehicle racing.

In Figures 5 and 6, similar parts as in previous Figures have been given the same reference numerals for ease of comparison and understanding.

Figure 5 shows apparatus 54 which may use microwave antenna arrays 42 or a radio frequency electrode 52. Also employed in the apparatus 54 shown in Figure 5 is container bodywork 8, and a high frequency power supply 40. An on-board radio telemetry device 56 is connected to the high frequency power supply 40. Also connected via a line 58 is an on-board DC electrical supply.

Figure 6 shows apparatus 60 utilising an entire racing vehicle 62. There is a front wheel high frequency connection 64 using co-axial cables as shown. There is also a telemetry control system 66, an electrical supply 68 and a rear wheel high frequency connection 70 using co-axial cables. The power supply 40 may be any suitable and appropriate power supply.

It is to be appreciated that the embodiments of the invention described above with reference to the accompanying drawings have been given by way of example only and that modifications may be effected.

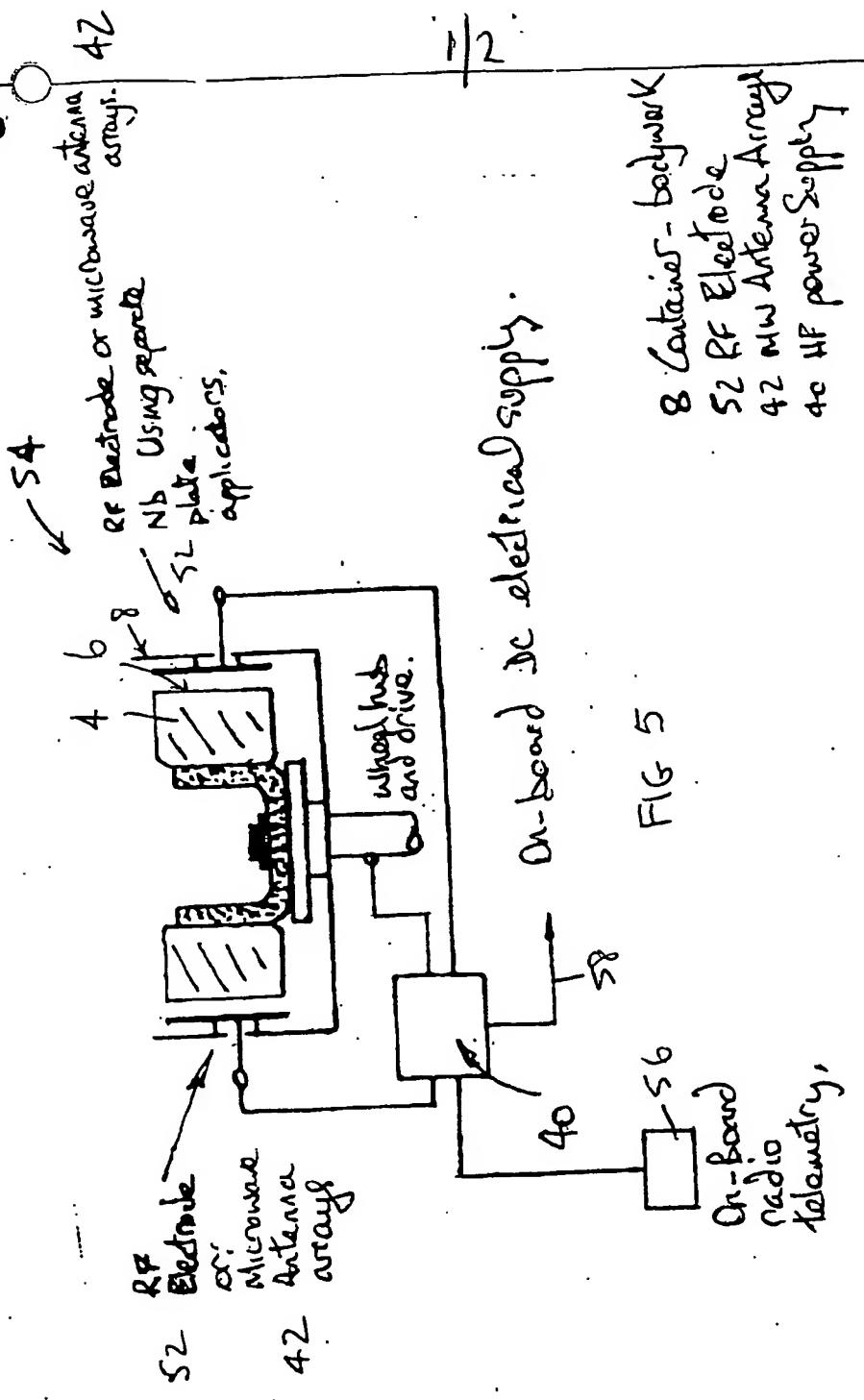


FIG 5

Best Available Copy

Mobile Vehicle - On Board System Example:

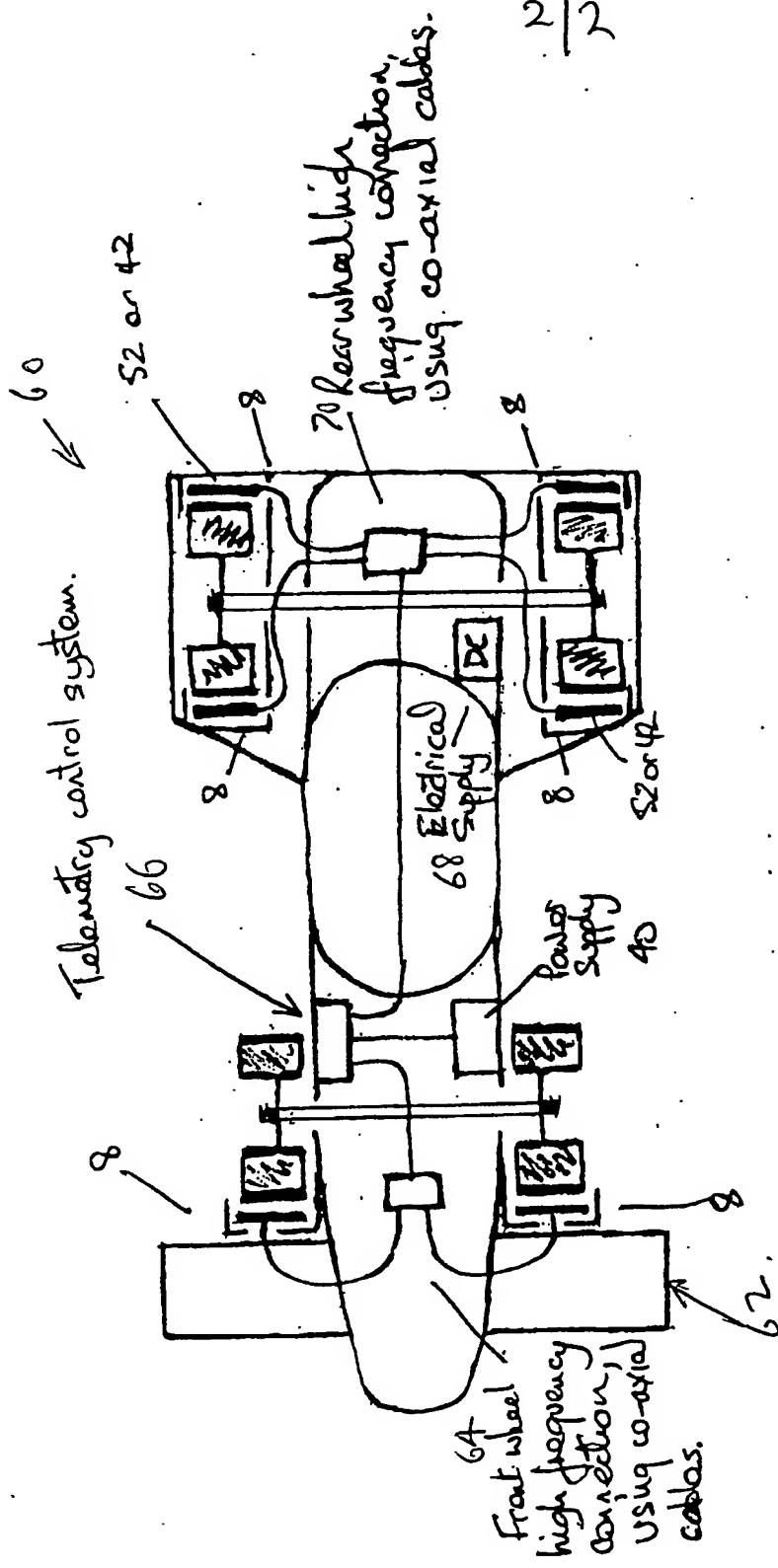


FIG 6

Best Available Copy